



Overview on the Smart Work Centres in Europe



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Introduction

The proportion of rural population is decreasing all over Europe; young and qualified people are the first to leave because of the lack of challenging jobs in the countryside. The immigration of qualified professionals, which have good market-contacts with the core regions, only to a small extent mitigates the decrees of socioeconomic activity in the periphery (Grimes, 2000). However, the establishment of smart work centres relying on networks and market contacts can help repopulate rural communities.

As Brette and Moriset (2009) put it, “today’s economy is submitted to a tension between centrifugal and centripetal forces, the outcome of which is uncertain”. Undoubtedly, the concentration of resources in the agglomerations brings benefits to the economy. Authors argue that the disparities in development are a natural consequence of capitalism (e.g. Grimes 2000). However, a notable share of global GDP today consists of immaterial (digital) content and services which are insensitive to distance (Brette and Moriset, 2009). The information and communication technologies (hereinafter – ICT) allow reaching the concentration not only physically, but also virtually (digitally). Thus ICT can serve as an important tool to overcome the distance in rural areas and fully take advantage of its resources.

At the same time the economy is changing toward a more creative conceptual age; routine task are being replaced by creative and flexible activities (Autor *et al.* 2003). According to Richard Florida's three T's economic growth theory, main drivers of development are technologies, tolerance and the creative class and talent – well educated people dealing with creative or conceptual tasks in their professional life (Florida & Tinagli 2004). Although the concept of creative class is most commonly associated with large cities, the nature of creative work allows employees and their tasks to be distributed across settings away from a physical business location (a central office).

So will rural territories become “necessarily remnants of the past inhabited by non-talented losers only”? as asked by the Swedish researchers Nuur and Laestadius (2012) from the Royal Institute of Technology or will the opportunities provided by the ICT and the changes in the content of professional duties give the rural inhabitants a chance to participate in the knowledge economy, which is traditionally linked to metropolitan areas, distantly?

The origin of the smart work (telework, e-work, mobile work) - working independently of time and place with the help of ICT - came from the last century when Nilles first coined the term ‘telecommuting’ (Nilles, 1975; Bailey and Kurland, 2002; Pyoria 2003). Defined as working outside the conventional workplace and communicating with it by way of telecommunications or computer-based technology (Nilles, 1994; Olson and Primps, 1984) telework constitutes an early form of virtual work.

There are potential direct and indirect benefits for teleworkers such as reduction of expenditure (fuel, car parking or public transport), reduction of commuting time, growth of productivity, flexible working time, de-reutilization of work, reduction of noise and stress at the office and an increase in mentoring opportunities. Telework also offers more time for



family and friends, hobbies, improved work/life balance etc. (Bailey and Kurland, 2002; WorldatWork, 2011; Eurofond, 2007).

However, the “geographic paradox” of the digital economy shows that investments in sectors which are the main users of the new ICT, such as software industry and telemarketing, tend to be located in large urban centres. The services off-shored to distant locations mainly consists of low qualification services such as call centres or services that might be divided into isolated modules such as software (Brette and Moriset, 2009). Also the off-shore services have been most often transferred internationally to low costs countries not rural areas (Grimes, 2000).

Indeed, data proves that the potential of telework has not been fully discovered. In 2010 more than 740 million people migrated within their country, almost four times the extent of international migration. In the UK a working population of 29 million commuters in 2010 spent more than 20 million hours travelling to and from work every day, loosing at least an hour of their time and costing more than 266 million pounds a day in lost production (Gratton, 2011). In 2005 only 7% of the employed in the EU27 were involved in smart work at least a quarter of the time. In comparison, in the United States the total number of people who worked from home or remotely for an entire day at least once a month in 2010 was 20%. 45% of the of the US working adult population of 139 million holds a job that is compatible with at least part time telework (Eurofond, 2010; WorldatWork, 2011). However, recent data show that 4 of 5 workers would like to telework in the United States, but only 2,3% do it more than half the time (not including the self-employed) (Lister, 2012).

Telework, which has been proposed as a promising solution for rural development, continues to be an urban and suburban phenomenon. It might be explained by several factors such as the importance of the transfer of tacit knowledge for which face-to-face contact is needed; the habit to locate activities in the same places, as well as the rigidity of labour market in rural areas and the superior quality of services in urban areas. Moreover, there seems to be a temporal lag between the possibilities offered by the ICT and the adaptation of behaviour (Brette and Moriset 2009; Grimes 2000). As Pyoria argues, “in order to make telework a viable alternative to more orthodox work practices, it has to be understood that a transition towards distributed organizations comprised of people connected mainly via ICT is a large-scale social and cultural transformation that will not happen overnight” (Pyoria, 2003). However, research also indicates a minor scale in-migration of high-skilled professionals to remote areas. These people possess well-established contacts with the core markets and thus might have a significant positive impact on the local economy (Grimes, 2000).

Experience also shows that one of the tools for the facilitation of smart work is the establishment of smart work centres, also called telework centres and co-working spaces (hereinafter - SWC). SWCs are special premises for smart workers considerably near the person’s living place. SWCs are established for various objectives, e.g. to create new jobs and decrease the level of unemployment; to maintain population in the region or municipality;



to involve in the labour market disabled persons or the risk groups – young people, young parents, elderly people.

The SWCs have flexible and multifunctional use by offering numerous services that depends on the group of their users. The basic facilities offered by the SWC are a computer with appropriate programs, office equipment and information and communication technologies. Often SWC offers also additional services: an access to interactive technologies (e.g. high quality video conference), conference rooms, special recreation zone, large public rooms, day-care services for children, café or shop, financial services, IT support, employment services etc. (Connected urban development, 2012). SWC offers a stimulating environment for small businesses, self-employed and employees of distant employers and thus may facilitate synergies among them.

Smart work centers bring benefits to employees, employers and local communities. Employees get the chance to live in a more peaceful, natural environment, decrease their commuting time, achieve a better work-life balance etc. Employers on the other hand can decrease personnel and operating costs and recruit better motivated employees. The local municipalities and communities can achieve an increased perception of the quality of life, advance economic activity and consequently local budget income. Moreover, smart work centers, especially those established as a bottom-up initiative, increase local social capital.

The **purpose** of this research is to identify the potential of smart work to raise economic activity in non-metropolitan areas. In order to do that, we:

- outline the main challenges for the rural development in the age of creative economy;
- provide an overview on the smart work in Europe;
- identify main benefits from smart work and smart work centres for employees, employers and territories;
- give an insight into the best practice regarding smart work centres in Europe.

We used such quantitative research **methods** as statistical data analysis and qualitative research methods as document analysis. A literature study focuses on the recent publications and discusses telework as an instrument for the regional development in the age of creative economy. The analysis of statistical data from previous studies outlines the incidence and potential of telework in Europe and other advanced nations.



1. Rural development challenges in the 21st century

1.1. Centrifugal and centripetal forces

The process of depopulation in Europe intensified after the World War II due to the changes in the economic structure. The number of employed in agriculture decreased along with the increase in agriculture's productivity whereas the number of employed in the manufacturing and services gradually increased (Temin 2002). Thus the out-migration of young and qualified people continues to decrease the liveability of rural territories. And the in-migration of qualified professionals, which have good market-contacts with the core regions, only to a small extent mitigates the decrees of socioeconomic activity in the periphery (Grimes 2000).

As Brette and Moriset (2009) put it, "today's economy is submitted to a tension between centrifugal and centripetal forces, the outcome of which is uncertain". Undoubtedly, the concentration of resources in the agglomerations brings benefits to the economy. Large local market encourages the economy of scale; saturated job market allows the employers to hire the most suitable employees and vice versa; externalities as the transfer of knowledge and technologies raise the productivity of production. As Alfred Marshall has said, "the mysteries of the trade become no mystery, but are, as they were, in the air" (Krugman 1998).

However, also the centrifugal forces play a role – not all resources are movable and can be reallocated to agglomerations (land) or are partly movable (human resources); the rise of the rent of land and also such externalities as the noise, pollution, stress etc. (Krugman 1998). In fact, large agglomerations are territories that experience the most extreme values of different indicators such as income, education and employment (Grimes 2000). Therefore also migration to less populated territories takes place. For example, since the year 2000 Sweden is experiencing a tendency of young families with children and elderly people moving from cities to rural areas. The main cause behind this life-cycle related migration is high living costs and expensive real estate in cities, proximity to nature, as well as children-friendly social and cultural environment.

Literature even argues that disparities in development are a natural consequence of capitalism (e.g. Grimes 2000). So will the rural territories become "necessarily remnants of the past inhabited by non-talented losers only", as asked by the Swedish researchers Nuur and Laestadius from the Royal Institute of Technology? (Nuur & Laestadius 2012).

1.2. Creative economy

The nature of economy has been changing during the last centuries – from the agricultural age in 18th century, the industrial age from the 18th century to the mid-20th century and the information age from the mid-20th century to the creative or conceptual age in the turn of the 21st century (Pink 2005). Figure 1 shows the shift to the creative economy.

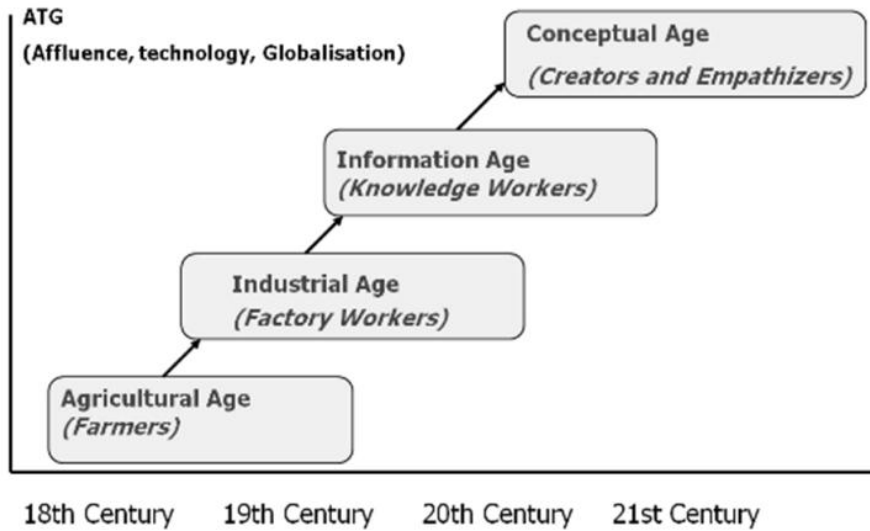


Figure 1. Changes in the nature of economy, 18th to 21st century (Pink 2005)

Consequently the role of employed has changed significantly. Routine tasks are being replaced by creative and flexible activities – non-routine interactive and analytical tasks – in an accelerating pace. At the same time the proportion of routine tasks is decreasing in a proportional rate (Autor et al. 2003). Figure 2 shows the changes in the proportion of routine and non-routine tasks from the year 1960 till 2000.

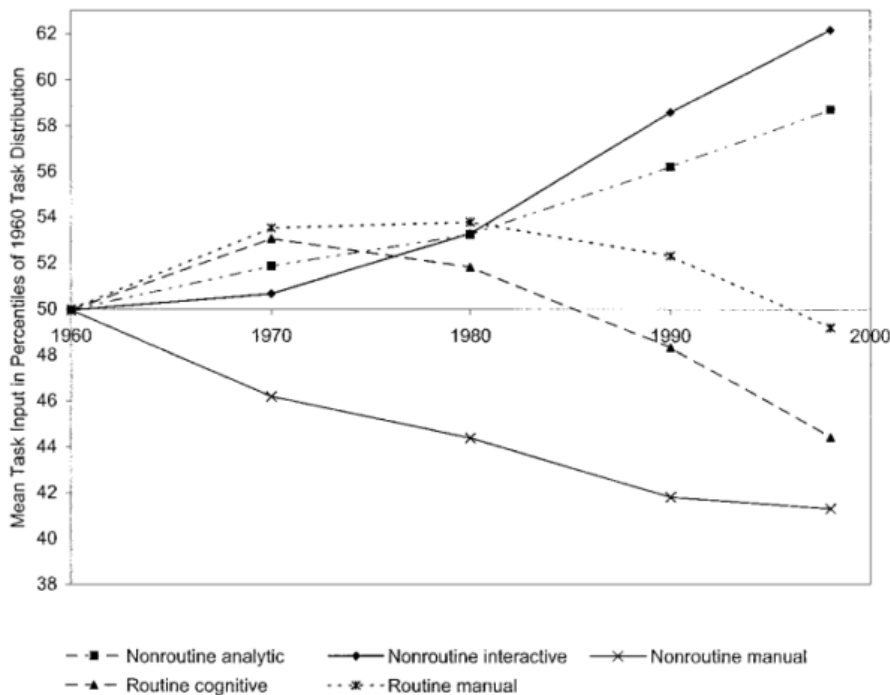


Figure 2. Trends in Routine and Nonroutine Task Input, 1960 to 1998 (Autor et al. 2003)



“The most successful economies and societies in the twenty-first century will be creative ones. Creativity will make the difference – to businesses seeking a competitive edge, to societies looking for new ways to tackle issues and improve the quality of life” (Department for Culture, Media and Sport 2001). According to three T’s economic growth theory by Florida, main drivers of development are technologies, tolerance and the creative class and talent – people that are well educated and deal with creative or conceptual tasks in their professional life. Technology is the central element of this model that is accompanied by the quality of human capital and tolerance that helps to attract foreign talent and mobilize local ones. The local attractiveness and openness becomes a significant factor for economic development, because talented and creative people are highly mobile economic resources (Florida & Tinagli 2004).

Although the concept of creative class most commonly is associated with large cities, the research shows that the creative class successfully acts also in rural areas. The Danish experience shows that the rural communities were economically and culturally self-sufficient till the 1970s. But nowadays part of them has successfully transformed into high-mobile residential and reproduction communities. For example, since the year 2000 Sweden experiences a tendency that young families with children and elderly people move from cities to rural areas, especially to territories with cultural and historical heritage. The main reasons for this life-cycle related migration are the proximity to nature, high costs of real estate and living in cities, as well as children-friendly social and cultural environment. Majority of migrants return to the place they left to move to the city of where their ancestors come from (Nuur & Laestadius 2012).

However, not all rural territories have been lucky and consequently might be regarded as “winner villages” and “loser villages”. There have been discussions on giving priority to some territories at the expense of others as it will not be possible to sustain the current level of services in all the territories. It has also been suggested to facilitate specialisation of the villages, e.g. recreational territories with second homes and facilities for leisure and holidays; entrepreneur’s villages where “everything is possible” and heritage villages with a traditional architecture (Moller 2012).

A significant reason for such migration tendencies is the rural life-style which has deep roots in such Northern European countries as Norway, Sweden and Finland. For example, the majority (52-57%) of Swedes have an access to a second home in countryside; one fifth (21%) owns such house. Academics, managers, officials from cultural institutions and public institutions – undoubtedly, the creative class - have access to such homes more frequently. Moreover, number of Swedish world class companies are located in small towns (in global context), such as Scania, ABB, SAAB Aerospace etc. (Nuur & Laestadius 2012).

1.3. The development of ICT

A notable share of global GDP today consists of immaterial (digital) content and services which are insensitive to distance (Brette & Moriset 2009). Thus the information and communication technologies (hereinafter – ICT) allow reaching the concentration not only physically, but also virtually (digitally) and ICT may serve as an important tool to overcome



the distance in rural areas and fully take advantage of its resources. Indeed, the development of ICT has encouraged the development of companies that offer such services as customer catering using ICT and the gathering, storing, processing and selling information in the North of Sweden (Nuur & Laestadius 2012).

The need for development of ICT interventions is also stressed by the development of the e-Economy and the increased competitiveness and openness that it brings about (Table 1). The knowledge economy is fostering market transparency, integrating separate geographical markets and facilitating integration into innovative global markets.

Table 1

The main e-development spheres (Carayannis & Zedtwitz 2005)

Sphere	e-Development
Privatization	e-Privatization
Deregulation	e-Legislation
Education and human capital	e-Learning
Government reform	e-Government and e-Procurement
Finance	e-Finance
Business climate	e-Taxation, e-Registration
Increased participation of the civil society	e-Society

The development of ICT gives advantages for private and public sector. Electronic flows of documents in the public administration can increase efficiency and transparency. Business climate is affected positively by e-Development. It lightens to start business and creates room for innovative applications. E-Finance develops access to rural finance. It improves general quality of services across industries and sectors of the economy and creates opportunities for cross-country and cross-sectorial development. The set of tools, competencies and applications of e-Development in the knowledge economy may be distributed among four main pillars of general development: institution-building, capacity-building, policy-making, investment-making (Carayannis & Zedtwitz 2005).

It has been argued that the flexibility offered by the ICT technologies may lead to either a further agglomeration or dispersal (Grimes 2000). The “geographic paradox” of the digital economy shows that investments in sectors which are the main users of the new ICT, such as software industry and telemarketing, tend to be located in large urban centres. “IT is likely to be a necessary but insufficient condition to an unambiguous spatial dispersion of economic activities” (Brette & Moriset 2009). Telework, which has been proposed as a promising solution for rural development, still continues to be an urban and suburban phenomenon.



It might be explained by several factors. A face-to-face communication is crucial for the transfer tacit knowledge and allows solving problems more efficiently. Thus the use of ICT may replace routine communication, but not the decision making. And only when face-to-face contacts are established they might be maintained by using ICT. Indeed, the experience shows that companies have been unwilling to outsource work to unknown distant teams (Grimes 2000).

Also the habit to locate activities in the same places within a half-hour contact zone seems to be lasting (Brette & Moriset 2009; Grimes 2000). Moreover, there seems to be a temporal lag between the possibilities offered by the ICT and adaptation of behaviour. As Pyoria argues, "in order to make telework a viable alternative to more orthodox work practices, it has to be understood that a transition towards distributed organizations comprised of people connected mainly via ICTs is a large-scale social and cultural transformation that will not happen overnight" (Pyoria, 2003 p.167).

Moreover, the rigidity of labour market plays a role, especially in households with both partners working; perhaps one of the partners has a job which he/she could perform also living in a rural area but the other not. Last but not least, the availability of high quality education and culture is an important factor when choosing the place of residence and it most often attracts residents to urban not rural areas (Brette & Moriset 2009).

Also the services offshored to distant locations mainly consists of low qualification services such as call centers or services that might be divided into isolated modules such as software (Brette & Moriset 2009). Also the services off-shored have been most often transferred internationally to low costs countries not nationally to rural areas. Moreover, the limited number of ICT users in rural areas leads to problems in establishing an advanced infrastructure. And the skills, as well as organisational and institutional capacity to exploit the potential offered by these technologies are even more important than the infrastructure (Grimes 2000).

In 1996 researchers in UK identified three groups of teleworkers: (1) professional, technical or managerial workers that partially work from home; (2) low-qualified workers (mostly women) who work from home for a single employer; (3) free-lance teleworkers in such occupation as IT, writing, design, accountancy and consultancy; (4) mobile or multi-location teleworkers. They argued that low-qualified workers are the most often found type of teleworkers in rural areas, but free-lancing seems to be the most promising option for rural development. Indeed, a research made in 1998 indicated on a minor scale in-migration of high-skilled professionals to remote areas. These people possess well-established contacts with the core markets and thus might have a significant positive impact on the local economy (Grimes 2000).

Also data prove that potential of telework has not been fully discovered. In 2010 more than 740 million people migrated within their country, almost four times the extent of international migration (Gratton, 2011). In the UK a working population of 29 million commuters in 2010 spent more than 20 million hours travelling to and from work every day, losing at least an hour of their time and costing more than 266 million pounds a day in lost



production (Gratton, 2011). In 2005 only 7% of the employed in the EU27 were involved in smart work at least a quarter of the time. In comparison, in the United States the total number of people who worked from home or remotely for an entire day at least once a month in 2010 was 20% of the US working adult population of 139 million. 45% of the workforce holds a job that is compatible with at least part time telework. (Eurofond 2010, WorldatWork, 2011). However, recent data show that 4 of 5 workers would like to teleworking the United States, but only 2,3% do it more than half the time (not including the self-employed) (Lister, 2012).

Thus ICT will not automatically stimulate the rural economy. The technologies should be integrated in the rural economies according to the needs of local inhabitants and entrepreneurs. In order to stimulate that, awareness raising and training is crucial (Grimes 2000).



2. Smart work and smart work centers

2.1. The concept of smart work

The past six generations have amounted to the most rapid and profound change mankind has experienced in its 5000 years of recorded history (Gratton 2011). This has led also to the transition in the way of working. An increasing share of businesses and other organizations are keen to use smart work (telework, distant work, e-work, mobile work) - a wide-spread practice that allows employees and their tasks to be shared across settings away from central place of business or physical organizational location (Robertson & Vink 2012).

New ICT solutions, rapidly developing technologies, as well as managerial changes can facilitate an increasing proportion of smart workers. Telework is the way how enterprises and public authorities can become more progressive. They will allow their employees to join together work, private and social life – not only domestic life, but also participation in nongovernmental or political organizations, cultural activities, that allows people to express themselves as social beings (Free Trade Union Confederation of Latvia 2010).

Work outside the office has many **definitions** in different regions. The beginning of such kind of work was in United States and the first name used to describe this work in 19th century was „outwork”. But in 1970-ies the term “telecommuting” appears. Terms “telecommuting” and “telework” were introduced by Jack Nilles in 1973. Defined as working outside the conventional workplace and communicating with it by way of telecommunications or computer-based technology (Nilles, 1994; Olson & Primps 1984) telework constitutes an early form of virtual work. Nilles work was concerned with development of spacecraft and telecommunications for United States air force and National Aeronautic and Space Administration (NASA). He worked in the University of Southern California as a researcher in various projects which main goal was to study possibilities how to decrease traffic jams if telecommunication system would develop and people would work near the home or at home (Mears 2010).

The article 2 of the European Framework Agreement on Telework of 2002 among such organizations as The European Trade Union Confederation (ETUC), Union of Industrial and Employers’ Confederations of Europe (UNICE), The European Association of Craft, Small and Medium-sized Enterprises (UEAPME) and the European Centre of Employers and Enterprises providing Public services un (CEEP) defines telework as “a form of organizing and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employer’s premises, is carried out away from those premises on a regular basis”. Smart work is often called also telework, distant work and e-work (European Framework Agreement on Telework 2002).

Definitions of telework rely on three main concepts: organization, location and technology. More than 60% of these definitions are based on a combination of at least two of these concepts. Since remote work and the use of new technology imply organizational changes, telework may be defined as work carried out in a location, where, remote from central offices or production facilities, the worker has no personal contact with co-workers there,



but is able to communicate with them using new technology. Within this broad definition, telework may be performed „on-line” or „off-line”, it may be organized individually or collectively, it may constitute all or part of the workers’ job and it may be carried out by self-employed workers or by employees (Martino & Wirth 1990).

Table 2

Overview of the definitions of telework (Lim et al. 2003)

Source	Definition
ETO (2000)	Telework occurs when ICTs are applied to enable work to be done at a distance from the place where the work results are needed or where the work would conventionally have been done.
Nilles (1994)	Telecommuting is the partial or total substitution of telecommunications technologies, possibly with the aid of computers, for the commute to work.
Mokhtarian (1991)	Telecommuting is working at home or at an alternate location and communicating with the usual place of work using electronic or other means, instead of physically travelling to a more distant work site.

Most relevant definitions are shown on Table 2. It is important to note that most definitions in literature focus on the workplace location being moved or the substitution of physical travel. Nilles (1994) and Mokhtarian (1991) concentrate on reflecting the process of travel substitution while ETO (2000) focuses on locational changes caused by telework (Lim et al. 2003).

So it means that there are various approaches how to define telework. Some of them hold a view that telework is employment only when IT and network of data transmission are used without interruption. The others accept as telework any job, even not concerned with use of IT and data transmission, inter alia all forms of self-employment. The first concept of telework definition is used in USA, but in European Union the second approach of telework definition is used. However, lately International Labour Office begins to separate telework and self-employment to apply different political instruments for teleworkers and handicraftsmen (Latvijas Universitate 2007).

Smart work might be performed at home or in other suitable premises, for example, a café or a library. Some of the smart workers even work on the road, for example, travelling managers or client support workers. So **teleworkers** can be classified as follows (Bieza 2004):

- teleworkers, who work at home – they are working for company from home in the working place, which is organized at home;
- teleworkers in the smart work centres – they are working in the special office or room, which is equipped with IT and communication equipment;

- mobile teleworkers – they are working in other places, not smart work centres, where the necessary technologies are available, for example, Internet café, library etc.

The mentioned classification of teleworkers is only one way, suggested by experts from different countries, how to classify teleworkers. In general all classifications are based on those three basic forms, while others suggest to merge them or to divide them.

2.1. Smart work in Europe

The share of employee teleworking more than 8 hours pro month increases every year (Figure 3). In 2000 only 6,6% of employees did telework in Europe, but in 2010 the share of teleworkers raised to 18,3%. Also in Japan and USA the percentage of teleworkers increased: from 6% to 25,1% in Japan and from 12,4% to 28% in USA. So Japan shows a very rapid increase of teleworkers - percentage share of employee teleworking more than 8 hours increased at 18,5 percentage points in the period 2000-2010.

The largest share of employee teleworking more than 8 hours pro month in 2010 was in Finland - 32,9%. The second place was taken by Belgium with 30,6% employee teleworking, and the third place - by USA with 28%. The lowest share of employee teleworking was found in Italy (5,5%) and France (8,9%).

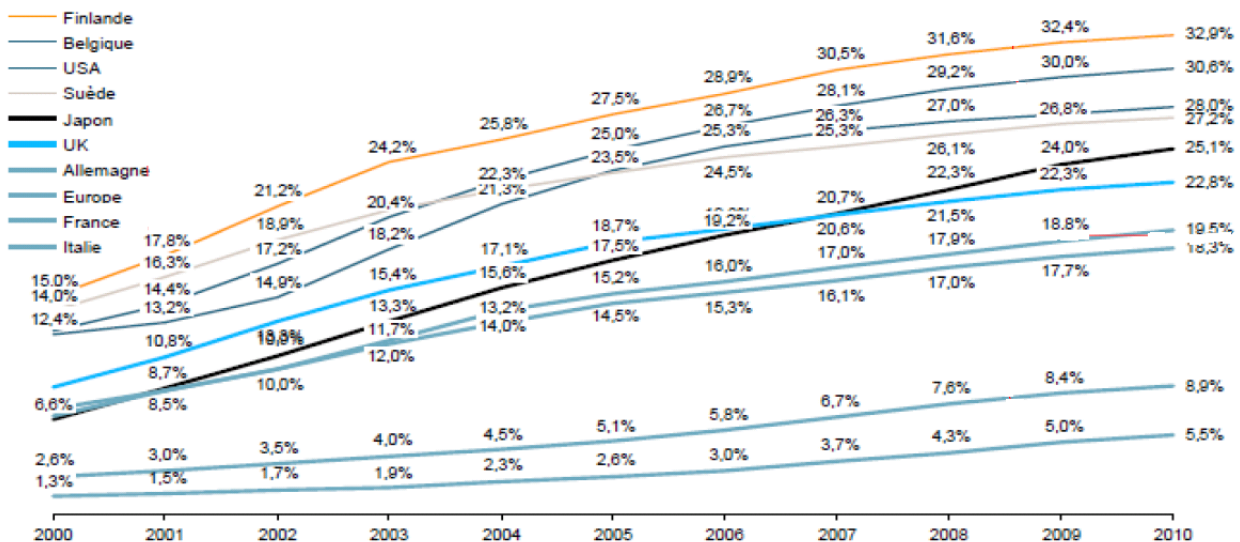


Figure 3. Percentage share of employees teleworking more than 8 hours pro month (5%), 2000 – 2010 (Rissanen, 2012)

The data provided by Eurofond show that on average 7% of the employed in the EU27 were involved in smart work at least a quarter of the time in 2005. The highest percentage of employees involved in telework was observed in the Czech Republic, where 15 % of employees were doing telework for a quarter of the time or more. Telework is also highly

prevalent in such countries as Denmark (14%), Belgium (13%), Latvia (12%) the Netherlands (12%) and Estonia (12%). Italy noted the lowest percentage, with only 2% of workers using telework, followed by the Hungary with 3% of workers using telework (Eurofond 2010).

Looking at the countries with a high prevalence of telework – that is, where telework is performed at least a quarter of the time – the following groups emerge: (1) telework is used to a very high extent in Denmark and the Netherlands; (2) telework is also highly prevalent in a group of Member States of the east European countries - Estonia and Latvia. Apart from this, the picture regarding telework is quite mixed, with many countries as diverse as Slovenia, Spain and the UK having close to average figures for telework usage. One group of countries made up of eastern and southern Member States – namely, Hungary and Italy – show very low levels of telework, with a percentage of less than 3%. However Italy, for instance has much higher than average home-based employee telework to total telework. It should be noted that this summary is based on statistics from year 2005 and situation could have been changed since that time.

We can also cluster the incidence of telework in three groups (Figure 4): (1) Member States with a high share of part-time (~12%) and full-time (~1,5-2%) teleworkers – Netherlands, Latvia and Estonia; to some extent also Denmark but with a higher share of part-time (~14%) and full-time (~2,5%) teleworkers; (2) Member States with a high share of full-time teleworkers (~1,5-2%) but a lower share of part-time teleworkers (~5-7%) –Slovenia, France and Spain; to some extent also United Kingdom but with a higher share of part-time (~8%) and full-time (~2,5%) teleworkers; (3) Member States with a rather low share of both part-time (~2-3%) and full-time (~0,5%) teleworkers – Italy and Hungary.

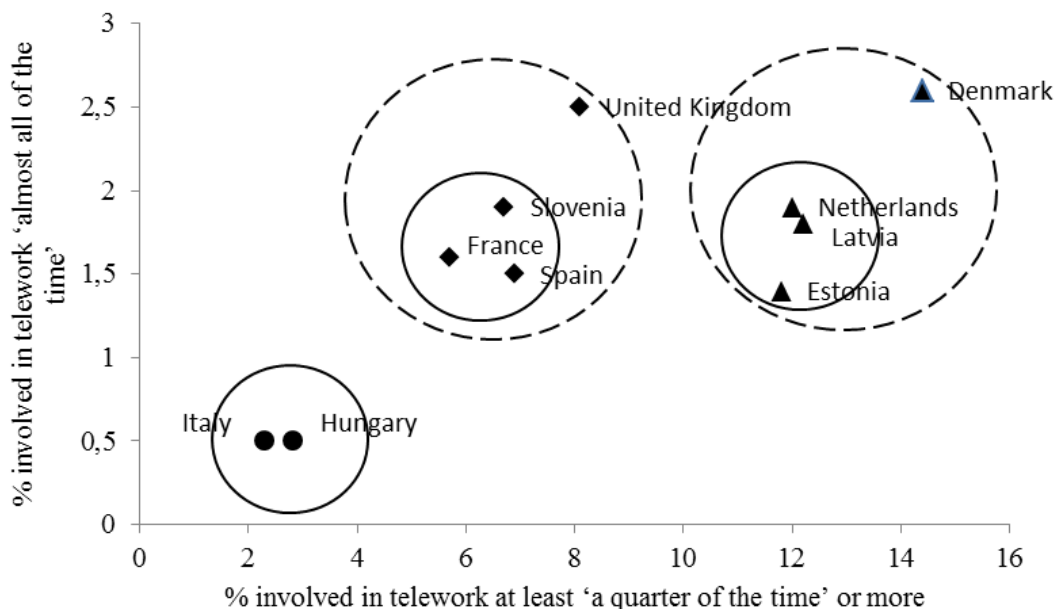


Figure 4. Clusters of Member States regarding the use of telework in 2005 (Eurofond, 2010)



In terms of different sectors of the economy, a considerably higher use of telework can be found in real estate, financial intermediation and education, where around 15% of the workforce regularly engages in telework at least a quarter of their working time.

Higher educated workers are more likely to use telework. More than 10% of employees with professional, managerial and technical occupations are involved in telework (OECD 2008). Also Bailey and Kurland (2002) in their review of teleworking literature indicate that teleworking is more frequent among firms that have larger percentages of knowledge employees in the workforce. The percentage of knowledge employees (software programmers, designers, researchers, etc.) in the workforce of teleworking firms is 13.9% whereas this percentage is 8.6% in the non-adopters firms, and the difference is statistically significant. Bailey and Kurland (2002) indicate that most teleworkers are skilled professionals (e.g. managers). Most jobs suitable to teleworking are performed by knowledge employees, e.g. product designers, software engineers, top managers, investment bankers etc. Those industries where knowledge is a competitive resource are an ideal environment to teleworking adoption.

2.2. The smart work centre

Experience shows that one of the tools for the facilitation of smart work in European context is the establishment of smart work centres, also called telework centres and co-working spaces (SWC). SWCs are special premises for smart workers considerably near the person's living place. They offer office spaces with the equipment and information and communication technologies.

SWC gives people a choice instead of making a stressful and time-consuming journey to the central office to go to a place much closer to home where they can concentrate on their tasks, meet other people and do nearly all of the things they would normally do at their employer's office. Most of the people do not use SWC every day. They might use the centre only one or two days a week or just a couple of hours, and on the other days they might go to their usual workplace or attend meetings with clients or colleagues (EurAcitv 2001).

SWC in European countries are different by their scale – they vary from 1-3 rooms with only 4-5 working places to big buildings with large office places and conference rooms. The SWCs have flexible and multifunctional use by offering numerous **services** that depends on the group of their users (Connected urban development 2012):

- Basic facilities: computer with appropriate programs (also an access to most popular data bases etc.), office equipment (copy machine, printer, scanner etc.) and information and communication technologies;
- Additional services: Access to interactive technologies (for example, high quality video conference), conference rooms, special recreation zone, large public rooms, day-care services for children, café or shop to get food, financial services (bank office, ATM etc.), IT support service, notary and law office, employment service, access to highways and public transport etc.

The general "architecture" of a SWC is shown in the Figure 5.

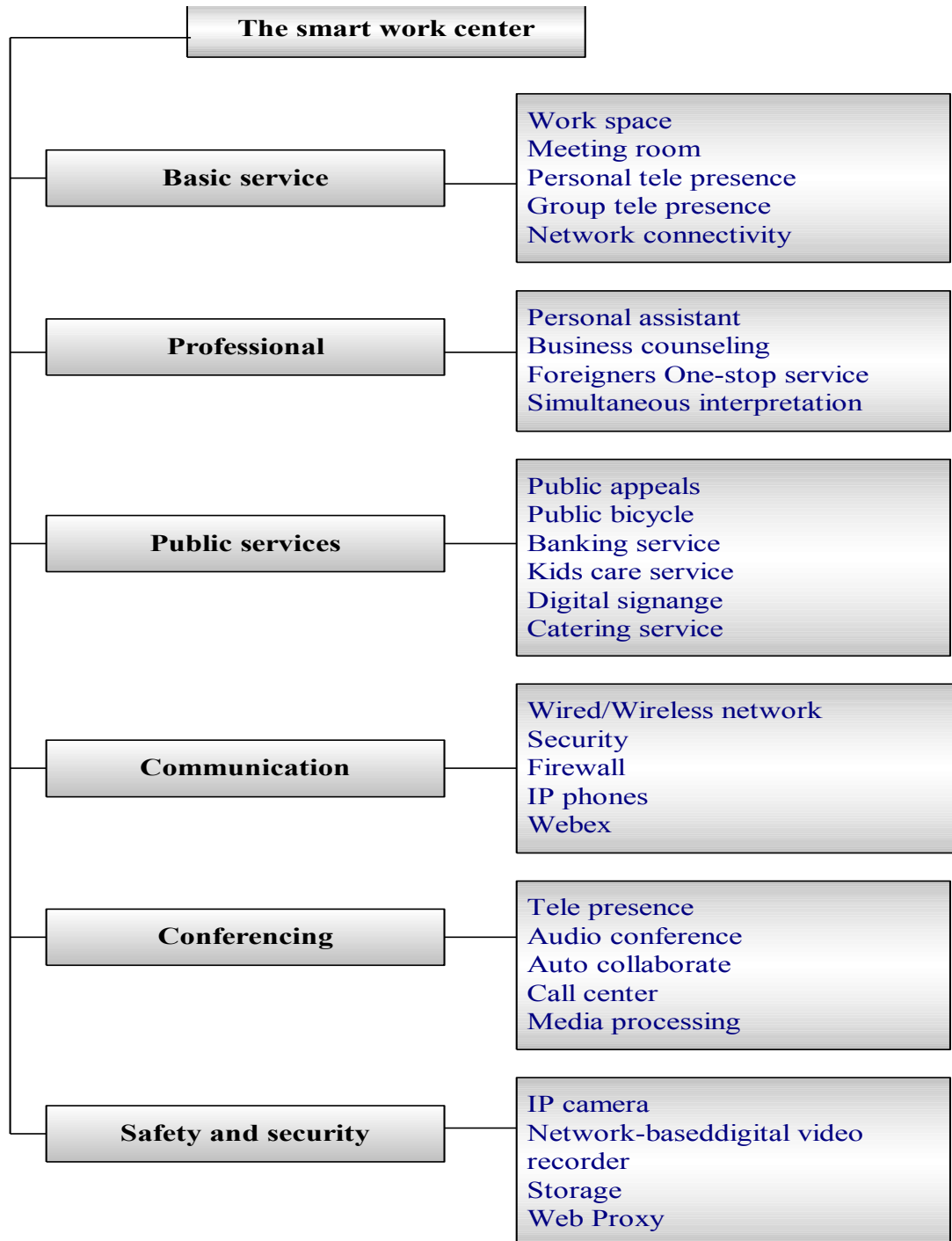


Figure 5. The „architecture” of a smart work center (Versteegh 2012)

The implementation of smart work and a creation of a SWC is always a tailor-made project. When an authority wants to implement smart work and establishing a SWC, there are different ways to do it. But the main steps to be followed remain the same (Figure 6).

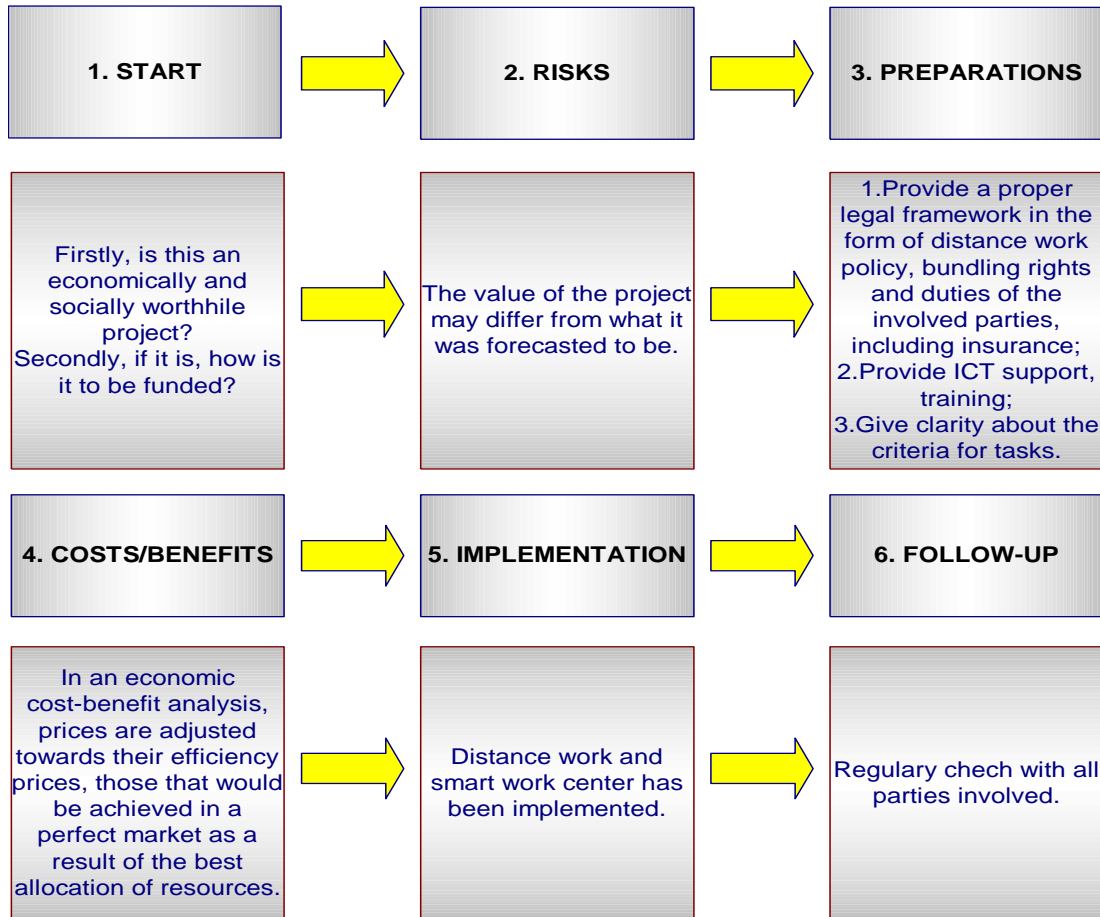


Figure 6. Main steps to establish a SWC

2.3. A theoretical model of the benefits of a smart work centre

In order to present a theoretical model (Figure 7) of the benefits that SWCs bring to the employees, employers and local communities we defined three groups of stakeholders-municipality, teleworker and company which pursue different goals. Situations and group actions in these circumstances might be in conflict or cooperative, depending on their interests. Therefore it is necessary to define the potential benefits from establishing the smart work centre to the main stakeholders. An increase of smart work would provide several social, economic and environmental benefits.

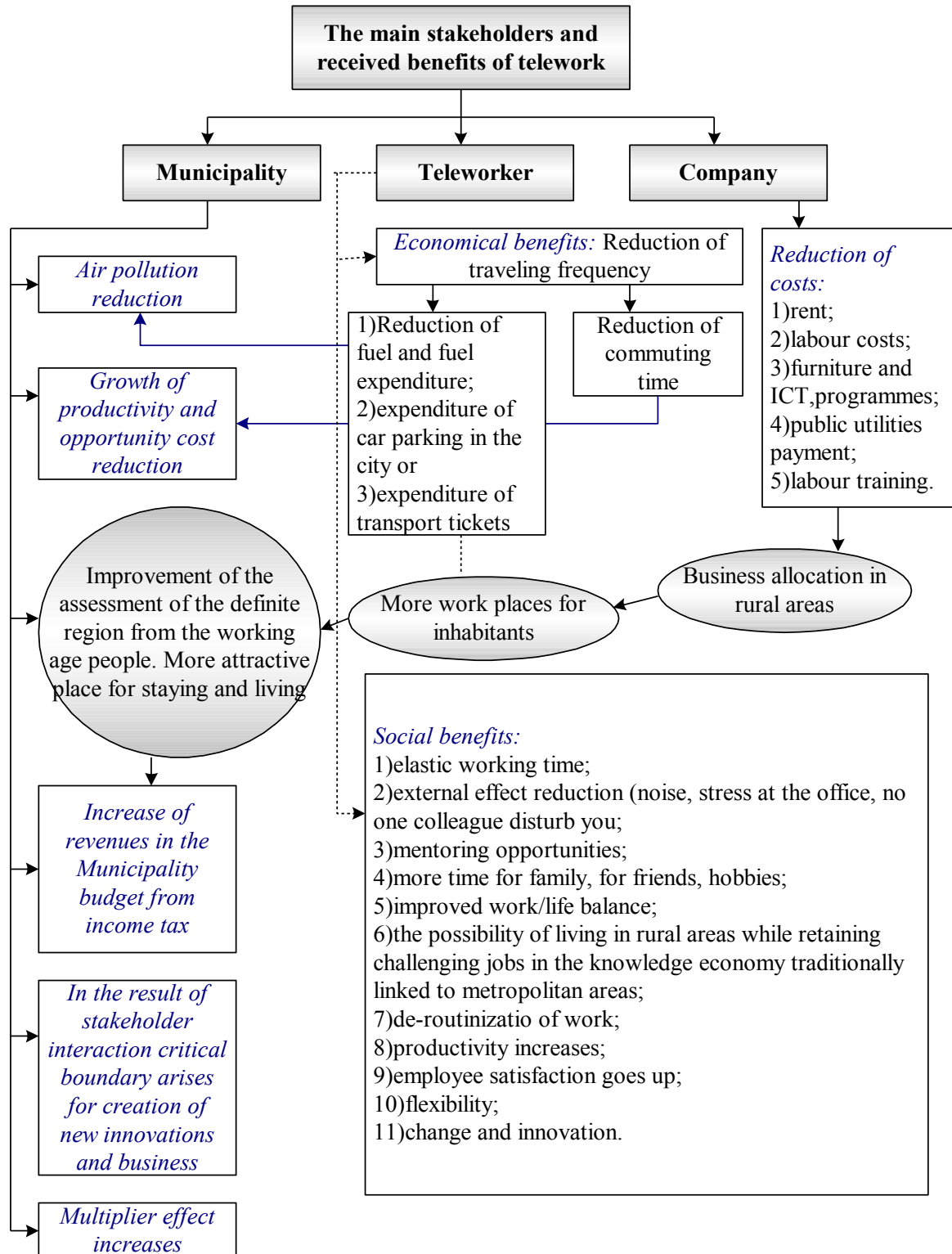


Figure 7. The main stakeholders and their benefits from telework



Telework work is influenced by many factors, e.g. the type of work being done in the company or the nature of work, technological infrastructure, the stage of readiness to adopt smart work approach in the company, the skills and knowledge experienced by each employee, flexible staff management. If planned, implemented and managed effectively smart work and smart work centres can be successful and return numerous benefits.

The main **advantages** for the **employees** working in smart work centres are (Connected urban development 2012; Sanden 2012, Vidnere 2011):

- equipped special working space (table, shelves, chair, lighting, technologies);
- higher motivation compared to working at home increases productivity and quality;
- wider possibilities to use ICT and office equipment;
- possibility to meet and communicate with other professionals;
- higher protection against break down or non-authorized use of technologies that results in a lower risks of an information loss;
- safety of communication; to provide safe access to office equipment for teleworkers, communication must be encoded (the responsibility about providing of encoded communication, safety of e-mail and protection against viruses lays on the SWCs IT staff);
- additional services;
- savings of energy that results in a decrease of electricity and other costs.

The implementation of smart work is beneficial for employees (Table 3).

Table 3

Benefits of the smart work for the employees

Economic benefits	Societal benefits
<ul style="list-style-type: none"> • Saves money on fuel and parking • Saves money on public transport • Reduced commuting time allows to work and earn more 	<ul style="list-style-type: none"> • Better work/family balance • More time for family and friends, hobbies • Increased job satisfaction • Increased autonomy • More flexibility • De-routinization of work • Quiet rooms or areas to allow for uninterrupted time • Holding meetings only when necessary • Ability to speak up about concerns without fear of retaliation • Allows to work persons with disabilities/health problems • Child care issues less stressful • Lower stress level • Mentoring opportunities • Possibility to life in a rural areas while retaining challenging job



Employees usually indicate time gain and efficiency as the most important advantages. These are caused by less time spent on traffic and better productivity due to independence and flexibility. An improvement of work/life balance is also an important benefit of smart work. The inclusion of disabled in the labour process is also an obvious gain. However, transport options can be a problem for this particular group. The possibility to work in an adapted home workplace can attract more people of this group of possible workers.

Compared to office-based employees, teleworkers experienced higher job satisfaction, less work-life conflict and higher productivity. Teleworkers are also able to avoid some of the stress associated with meetings, casual conversations and other interruptions in the workplace that impede the work process.

There is indirect benefit which is connected with the reduction of commuting time. Let's introduce simplifying assumption: a teleworker saves 2 hour commuting time per working day. It saves 10 hours pro week and 520 hours pro year for work or free time depending of individual preferences

However, telecommuting comes with its own challenges. From the perspective of the employee the main **disadvantages** are:

- less contact with the team- supervisors and the colleagues;
Although teleworkers are in touch with people less often, they seem to be able to remain connected to the information they need even without constant communication
- reduced informal communication, mentoring, training;
Employees may feel isolated. Informal communication in the workplace can provide social support as well as the ideas and information needed to perform a job more effectively.
- interruptions from home;
For some teleworkers it is difficult to find balance between private life and work. Therefore it is important to find out ones individual for teleworking. Each potential teleworker should have an individual evaluation based on a comprehensive questionnaire according several criteria.
- ICT problems;
It depends on individual skills.
- career development and promotions.
There is a concern about employees working in an environment that does not allow for on-going face-to-face communication with co-workers and managers—that people will be „out-of-sight, out-of-mind“.

As much as important is the involvement of **companies** because companies create new jobs. They can save money by transferring production (service) from the city to the rural areas where rent and wages are lower. Companies usually want to maximize profit trying to be innovative and flexible. One way how to maximize profit is the reduction of costs and modern human resources management. Then it is possible lowering such costs: furniture purchase, ICT, public utilities payment, staff training and rent. Sometimes it is suitable to



transfer ICT services (or other services) from the city to the rural area and consequently reduce the labor costs. Unfortunately in many cases the employers do not provide their staff with smart work opportunities, mostly due to unawareness and distrust. Consequently development of smart work depends on all stakeholders' openness to new way of thinking. Table 4 shows the main benefits smart work brings to the companies / employers.

Table 4

Benefits of the smart work for an employer

Economic benefits – cost savings	Societal benefits
<ul style="list-style-type: none"> • If employer's business is located in an expensive area, distance working can decrease real estate costs • If employees live in areas with a low cost of living and good internet connectivity, they can afford to accept lower salaries 	<ul style="list-style-type: none"> • Recruitment and retention of staff It is possible to attract good specialists who otherwise would not work in this office due to different reasons, e.g.: <ul style="list-style-type: none"> • specialist is dissatisfied with the wage for a job where he must be present all the time • specialist lives far from the office • the office is located in rural area, where the possibility to find specialist with matching skills is lower
<ul style="list-style-type: none"> • Rent cost reduction due to reduced office space requirements 	<ul style="list-style-type: none"> • Adherence to company's regulations and increased organizational commitment
<ul style="list-style-type: none"> • Decrease in furniture costs due to reduced working space 	<ul style="list-style-type: none"> • Reduced absenteeism
<ul style="list-style-type: none"> • Improved productivity 	<ul style="list-style-type: none"> • Better service (longer service / opening hours) and opportunity to offer more flexibility
<ul style="list-style-type: none"> • Decrease of ICT costs 	<ul style="list-style-type: none"> • Promoted diversity
<ul style="list-style-type: none"> • Public utilities payment reduction (employees may consume less energy at work for heating and lighting, sewerage) 	<ul style="list-style-type: none"> • Decrease of production time: decrease of the period between customer's order and product delivery
<ul style="list-style-type: none"> • Decrease of training costs 	<ul style="list-style-type: none"> • New channels of service distribution and an increase in market reach

Successful companies have vision on work as an activity, not a place. Smart work approach results in reduced costs which allow the company to offer products at a lower price, higher



quality or both to its customers. From the perspective of the employer such aspects as cost savings, increase in productivity and turnover are important because they increase the profit. Telework gives the opportunity to work more efficiently and to offer a better service to the client and to foresee longer service/opening hours. Moreover, telework gives the opportunity to redesign and simplify the work processes. Moreover, the ability to work with people in virtual spaces may extend a network of relationships to clients that are further and further away. This may lead to as virtual meetings become so common that it is impossible to meet everyone a decrease in the urge to physically meet.

Smart work adoption in companies is rather often met with **resistance**. The main disadvantages are:

- it is difficult to **control** employees and the process of work. Flexible companies adopt change in view: from performance to result-oriented leadership. Employer pays salary that depends on job done;
- there is concern about **accessibility** of teleworkers. Agreements need to be made about fixed deliberation moments of the team; the hours during which the distance worker needs to be accessible by telephone or by mail, and the e-work days must be carefully selected in order not to impede daily operations;
- **safety** of information and product produced. The teleworker remains responsible for the correct use and management of material and the information put at his/her disposal by company. The distance worker must assure that confidential information on his/her personal computer is kept to a minimum. If this is not possible, the employee must take the necessary measures to limit the risk of loss or theft. In some cases it is necessary to get special equipment that provides safe distant accessibility to office computers.

The development of telework can be a significant contributor to local and regional development / competition. Table 5 shows the main benefits smart work brings to the local communities.

Table 5

Benefits of the smart work for local community

Economic benefits	Societal benefits
<ul style="list-style-type: none"> • Growth of productivity • Multiplier effect increases 	<ul style="list-style-type: none"> • Increase of entrepreneurship • Better availability of jobs, services and reduction of internal emigration
<ul style="list-style-type: none"> • Increase of revenues in the local authority budget from income tax due an increase of population 	<ul style="list-style-type: none"> • Reduction of transport intensity which results in: <ul style="list-style-type: none"> • -air pollution reduction • -traffic congestion reduction • -traffic accident reduction
<ul style="list-style-type: none"> • Local and regional development 	<ul style="list-style-type: none"> • Region becomes more attractive



Telework extends into a wide range of areas of political and administrative responsibility. Government policy plays an important role. The telework may be a specific target for development strategies in the context of regional economic planning. There are four potential means of measuring telework benefits for local authority and society:

- **Employment**

The development of telework and smart work centers can create new jobs for people with different qualification and skills in rural areas. Telework helps to involve parents of small children, graduates and disabled persons in the labour market.

The availability of new jobs and services increases people's willingness to stay and live in rural areas. Consequently the region enhances its economic and entrepreneurial competitiveness. Better availability of jobs and services reduces migration from rural areas to metropolitan areas. Migration has a significant impact on demographics and labour force in regions. It benefits most affluent regions, whereas poor regions would lose population due to migration thus raising the regional disparities. However telework might strengthen local and regional development / competitiveness.

Moreover, the territory might receive more revenues in the budget from income tax and property tax; however it depends on the countries tax system. Multiplier effect would positively influence economic growth in the region.

- **Increase of entrepreneurship**

An enhancement of the economic and entrepreneurial competitiveness of firms is important in the rural areas. The result of stakeholder interaction, critical boundary arises for creation of innovations and new businesses.

- **Domestic and foreign investment**

Private investments in the different industries may be encouraged or channelled in certain directions by specific fiscal or regulatory measures.

- **Reduction of transport intensity and CO2 emissions**

Telework influences reduction of daily movement from home to work (and vice versa) by different transport modes. Consequently less daily transport intensity results in less energy consumption and less environmental pollution. A study by United Kingdom Department of Transport found that teleworking reduces the commuting car mileage travelled by teleworkers by 48-77% which, taking into account some increases in domestic travel, represents an 11-19% reduction in both mileage and trips (Buttazzoni *et al.* 2009).

The greatest impact in terms of greenhouse gas (GHG) emission reductions enabled by teleworking, however, would be achieved in a smart world, where total emission reductions of 455 MtCO₂ and 1575 MtCO₂ would be achieved in 2030 and 2050, respectively. In smart world, indirect rebound effects would produce an increase in GHG emissions in 2030 (of about 38 MtCO₂) and a decrease (of about 191 MtCO₂) in 2050.

This is due to the fact that over the years 2030–2050 a growing number of regions are assumed to deploy policies and strategies that can effectively channel the additional economic resources generated by the reduction in transportation costs enabled by teleworking into activities that lead to further reductions of GHG emissions (Buttazzoni *et al.* 2009).

Literature suggests that large companies (over \$1 billion in annual sales) in the United States and United Kingdom alone can achieve system-wide financial benefits of close to \$20 billion within a decade, plus saving millions of tons of CO₂ emissions. In addition there are other benefits like “air travel, improving productivity and better work-life balance” (Carbon Disclosure Project 2010).

The impact of working from home varies depending on the amount of time spent at home and the efficiency of the economy in which teleworking is introduced. For example, if a significant number of people worked from home more than three days a week, this could lead to energy savings of 20-50%, even with the increase in energy used at home or non-commuter travel. Home-working allows employers to use or build smaller offices that require less energy to construct and maintain (The Climate Group 2008).

Teleworking can be effective in improving governance, organizational and individual performance. The initiative of municipality is crucial to facilitate smart work center implementation in the region. The municipality may support the establishment of smart work centre by developing environment of entrepreneurship, developing concerted interministerial policies, attracting private investments and/ or making partnership, adopting European Structural funds (for example, temporary subsidizing new jobs). Cooperative strategy between stakeholders - municipality, entrepreneurs and society - may create economic and social benefits for everyone. The initiative of municipality becomes worthwhile in middle and long term (Figure 8).

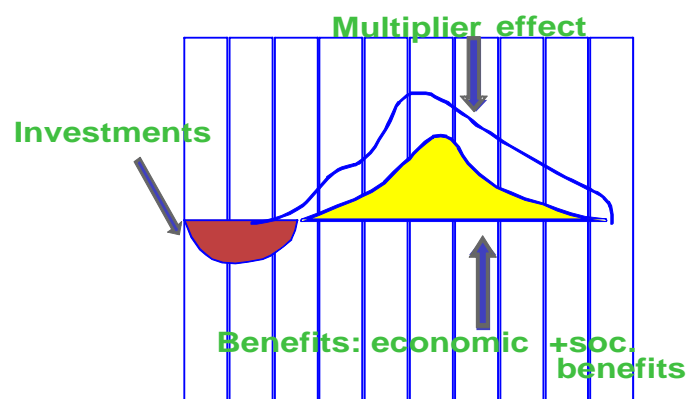


Figure 8. Economic and social benefits of the establishment of SWC



4. Best practises from Europe

SWC as a bottom-up initiative (Estonia)

In Estonia the movement of smart work started as a bottom up initiative in the island Saaremaa. Taking into account the importance of local non-governmental initiative, Estonian Smart Work Association provides **awareness measures and training for the local leaders**. In 2009 the association and its partners launched an on-going project "The development of a network of telework centres to support risk groups in entering the labour market and employment". The project's aim is to improve the employment and individual development opportunities of risk groups in rural areas and small towns by launching a network of community work centres and promoting a wider use of flexible forms of working. During the project 5 pilot regional work centres were launched and provisions were made for the creation of further 10 centres. Training was provided for 30 potential work centre leaders, along with another 150 people from risk groups - local women with young children and elderly persons. The telework centres are not large, there are approximately 12 working places in each of them. All centres use modern ICT solutions and offer a fast and secure internet access. The centres have been equipped with proper information systems and website building software solutions.

For example, a local NGO **Lahemaa Telework and Training Centre** has established smart work centres in **Kõnnu** village with 70 inhabitants and **Kolga** village with 500 inhabitants. The centre in Kõnnu was started by 5 local women and now there are already 12 women working. Women with extensive educational background, work experiences and social networks act like mentors and provide training, jobs and implement projects; some of the women are responsible for the ICT equipment and solutions. Moreover, women also share their child care duties and organise events for the local community, e.g. environmental awareness courses for children, heritage research projects and consultations to local villages on their development plans.

Another example is the **Laulasmaa Telework Centre** which was established in 2009 by two active women in cooperation with the local municipality. Laulamsaa is a village with 775 inhabitants ~40 km from the capital city Tallinn. Therefore the centre serves as an alternative for daily commuting to the capital city. As many young families reside in Laulasmaa the centre provides also child care services.

Also the **Abja Telework Centre** was started in 2010 by four active local women. It is located in a small town with 1294 inhabitants in Southern Estonia. The centre has four shared work places and offers inter alia such services as administrative support, book-keeping and project management for local NGOs and small enterprises (Estonian Smart Work Association 2012).

SWC as a sustainable business (Latvia)

The first and largest co-working space in Latvia is called **Birojnica** (an Office). It is located in the center of capital city **Riga** and for a fee (~5 euros a day, ~30 euros pro month) offers such services to teleworkers as a work place (freely transferable table and chair), high speed Wi-Fi, news and business databases, tea and coffee, printing and scanning. Also for an additional



fee a meeting room is available. Birojnica merges the operation of co-working space with keeping a **book-store, café and operating as a life-long learning centre by organising lectures and seminars on wide range of topics** (e.g. How to raise a child in information society; Game theory in contemporary sciences etc.). Birojnica also offers venues for seminars and conferences (Birojnica 2012). This allows them to work as a private company without public subsidies.

The fulfilment of Birojnica is around 10 clients simultaneously. They are not only self-employed persons but also employees from companies who time after time want to change their working environment. Thus Birojnica also serves as “the third place” (apart from office and home) to raise the creativity. Sometimes companies place their temporary employees in Birojnica, e.g. a programmer worked in Birojnica for a month and his employer paid the fee. Majority of Birojnica clients are professionals from the creative industries, IT specialists, people who start their business, accountants, interpreters etc. The premises have been also used by the head-hunters for the tests and interviews of the potential employees. The founders of Birojnica have thought about establishing similar co-working spaces in the regions. They see the potential in spaces that are already being used to provide other services such as libraries and schools. In order to be financially sustainable, co-working spaces also in regions should diversify their services, e.g. establish a café or offer premises for social activities.

Network of Smart Work Centres in local department (France)

There are many SWC in **France**. One example of SWC supported by local government and private investors is in **Boitron**. On the 21st September 2010 Boitron, a small 350-inhabitant city in the Orne department, inaugurated its smart work centre, which was the first of a network of 10 smart work centres. The Local Council of Orne department voted to financially support a plan for the building of 10 telecentres within 2 years. A partnership with the Regional Council of Basse-Normandie allowed the automatic financing of high speed access to the internet for each smart work centre. The terms of reference provide for moderate minimal facilities that are adapted to rural areas, 2 independent offices, a meeting room, and a high-speed access to the Internet that allows to access innovating uses of collaborative work from a distance, communication, high definition videoconference, file sharing, video broadcasts, distance training. Complementary services can be considered, but are not obligatory (De la commune de Boitron 2012).

SWC in a technological business park (France)

An example of large scale telework centre is in the North of **Rouen, France**. The ALEXANDRIE Group with its SOKRATE smart work centre offers about 2,000 m² offices for permanent or temporary use to workers of private or public businesses. The SOKRATE smart work centre is a workspace shared among organizations, companies and administrations. It is situated in a favourable environment: near a shopping centre, in a business park, with shared staff, canteen, day-nursery, green spaces, a forest, sports and leisure facilities, and a good public transport and road service. Equipped with all the modern media communication, such as high-speed access to the internet, a videoconference room, collaborative work tools, a data



center and conviviality spaces such as a cafeteria, arrival lounges, restaurants inside and outside, meeting and (self) training rooms, the SOKRATE telecentre belongs to a technological business park which is a real workplace, ideal for innovation and performance. (Cofhuat 2010).

SWC in a university complex (Finland)

The history of the smart work and smart work centres in **Finland** goes back to early 1990's when the Finnish Flexiwork Association was created in 1993 and the first SWC, named Taitoverkko (Skill Net) in a form of cooperative was inaugurated in the beginning of March 1995 in **Järvenpää**, 40 km north of Helsinki to support people commuting daily to Helsinki. This centre offered a dozen of flexible working places for people working in large organizations, independent entrepreneurs and SMEs. It also acted as a hub for local small office services and local activities.

In the city of **Valkeakoski**, which is located approximately 35 km to the south of Tampere, Telecentre Project started in 2011. Appropriate premises are available in the Valkeakoski Campus area, consisting of three educational institutes. The SWC will be a Hub for young people and for those willing to employ themselves by setting up their own business. In addition to start-ups and spin-off companies the SWC is also meant for existing companies with special needs. Members of the Hub will collectively respond to these requests by finding creative solutions, technical, artistic or practical. The third purpose of the SWC is to offer working space and facilities for its members. The funding from European Regional Development Fund for the start-up phase project will be applied (Cofhuat 2010).

SWC & local service point in a small municipality (United Kingdom)

The example of SWC together with various additional services is the Naver Teleservice Centre, which is a Community Telecottage in the settlement of **Bettyhill** in North Sutherland, **Scotland**. The Naver Teleservice Centre exists to encourage training, advance education and improve employment prospects by promoting industry and commerce for the population of Bettyhill, Strathnaver, Altnaharra and the surrounding area - a geographically challenged, economically deprived and fragile rural community. The centre provides a number of services including free use of computers, free internet access and e-mail services (supported by the Highland Council Library Service), office services (Photocopying, Faxing, Word Processing etc.). They also provide offices on a per hour/day/week/month basis. The services of the Naver Teleservice Centre are available to everyone who wishes to use them, including visitors to the area. The catchment area of the NTC is roughly a triangle bounded by Tongue to the west, Armadale to the east and Altnaharra in the south, the population of this area is approximately 1100 people (The Naver Teleservice Centre 2012).

Telework to improve life quality of various disadvantaged groups (Hungary)

In **Hungary** the central government has facilitated the use of smart work. As early as 1997, the government launched the first action to promote telework with a view to improving the labour market position of various disadvantaged groups. It established a 'public benefit company', a sort of public-private partnership, to facilitate the spread of smart work by



creating home-based jobs, especially for people with disabilities, women staying at home (either raising children or taking care of other family members) and those living in rural settlements lacking job opportunities in the vicinity. In 2001, in a joint action with the Budapest Mayor's Office, the Ministry of Social and Family Affairs established a smart work centre within the Budapest Labour Market Intervention Centre to train potential smart workers. In 2002, the Ministry of Employment and Labour and the Ministry of Informatics and Communications also launched an experimental programme to create 1,000 jobs through smart work and subsidised it fairly generously, in terms of both wages and investment in up-to-date technology. Later on, the Labour Market Fund supplemented this support by financing 370 more jobs and by providing training and wage subsidies. In the spirit of equal opportunities, these programmes gave preference to disabled people, single parents, members of the Roma minority, people over 45 and people taking care of a disabled or elderly family member at home (Eurofond 2004).

Large scale SWC (Italy)

Centro di Telelavoro — Roma Nexus is a teleworking center, realized by Telecom **Italia** in cooperation with **Rome municipality**. The Center offers advanced IT and telematic services, including the availability of the most widely used software packages, the access to company intranets and software, Internet, e-mail, document sharing between users, data transfer, access to remote computers or to different data bases. Moreover a Service Center ensures helpdesk availability and secretarial services like photocopies, phone and mail handling, parcels dispatching and booking. The center, organized on a desk-share policy, offers different kind of workspaces that can be booked for a few hours or months and configured, according to the different requirements, as flexible and modular 'virtual office'. In the Center there are about 100 multimedia workplaces, placed in single offices or in open spaces of different sizes (SocioSite 2005).

Conclusions

The age of creative economy brings not only threats, but also new opportunities for the development of rural areas. Some of the rural territories will lose, some gain; therefore it is crucially important to look for **new ways how to adapt** to the changing circumstances. Such advantages as the natural, cultural and historical heritage, as well as an open and inclusive social and cultural environment may attract new residents to rural areas.

The opportunities provided by the ICT and the changes in the content of professional duties may give people in less populated areas a chance to participate in the creative economy distantly. Defined as working outside the conventional workplace and communicating with it by way of telecommunications or computer-based technology **smart work** may yield many **substantial benefits to companies, individuals and local communities** and thus the widespread adoption of smart working may produce significant economic and societal benefits.



The real benefits of smart work are becoming more obvious to a large number of employers, policy makers and the workers themselves. Many no longer see telework as a fringe activity for a few specialists or privileged individuals, or simply a question of working at home a few days a week, but instead are starting to see how the introduction of ICTs into the workplace and into working lives is fundamentally changing all aspects of work and how organization competes and operates across all activities and workers. However the facilitation of smart work requires a **shift in corporate culture and ways in organising our life** in general.

Indeed, literature suggests that telework has a potential to become an increasingly common practice of working in the 21st century due to development of ICT, changes in structure of economics (conversion from simply occupations to intellectual work) and work culture and management. However, the level of employees in European Union working as teleworkers is still rather low. Overall statistics shows that performing telework on part time basis is more common than full-time telework. Also data on teleworkers in member states differ. The distinctive north-south differences in the take up of telework in the Europe are clearly shown. **Explanatory and encouraging measures** could help to foster this transition, as large part of employees and employers are still rather sceptical on the feasibility of teleworking.

Telework is closely related to knowledge economy as it requires medium or high-skilled work force with well-developed abilities to plan their agenda. Knowledge economy is traditionally linked to metropolitan areas. Therefore **regional development policies that support and facilitate telework** could help to sustain high skilled population outside metropolitan areas and increase economic activity in such areas.

The **establishment of smart work centers** seems to be an option both in and outside metropolitan areas. It could minimize the drawbacks of telework mentioned by the respondents of interviews, e.g. loss of socialization, the absence of working place and the lack of premises for meetings. Smart work centers offer a stimulating environment for small businesses, self-employed and employees of distant employers and thus may facilitate synergies among them.

Smart work centers bring **benefits to employees, employers and local communities**. Employees get the chance to live in a more peaceful, natural environment, decrease their commuting time, achieve a better work-life balance etc. Employers on the other hand can achieve decreased personnel and operating costs and recruit better motivated employees. The local municipalities and communities can achieve an increased perception of the quality of life, advance economic activity and consequently local budget income. Moreover, smart work centers, especially those established as a **bottom-up initiative by the local communities**, increase local social capital.

From a regional and local point of view, telework gives an opportunity to digitally participate from distant locations, including the countryside, in the knowledge economy. Thus it may serve as a significant instrument for regional development by attracting or at least keeping people outside metropolitan areas. However, the establishment of a smart work center outside metropolitan regions seems to be a more challenging task. The proportion of free-lancers might be lower, therefore additional functions such as **training and help in searching**



job opportunities might be crucial. A promising solution might be the establishment of smart work centers in the towns with universities and vocational schools where the young generation – the future high-skilled workforce - concentrates. In rural territories, smart work centers could be closely coordinated with the **delivery of public services** and placed in already actively used premises, such as libraries, schools or community centers.

Moreover, smart work centers could cooperate with already working business support infrastructure offering consultation and support for the business start-ups. Thus they would act as the **facilitators of economic activity in the regions**. In order to evaluate these options, additional research is required to offer sustainable solutions for teleworking and smart work centers in non-metropolitan areas.

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